

CLAIMS

What is claimed is:

1. An electrolyte for copper electroplating, comprising:
an electrolyte solution; and
a copolymer comprising ethylene oxide and propylene oxide providing in said electrolyte solution.
2. The electrolyte of claim 1 wherein said copolymer is a block copolymer.
3. The electrolyte of claim 1 wherein said ethylene oxide is present in said copolymer in a quantity of at least about 60% by weight.
4. The electrolyte of claim 1 wherein said copolymer is present in said electrolyte solution in a concentration of from about 50 ppm to about 500 ppm.
5. The electrolyte of claim 1 wherein said copolymer is a random copolymer.

6. The electrolyte of claim 5 wherein said ethylene oxide is present in said copolymer in a quantity of at least about 60% by weight.

7. The electrolyte of claim 1 wherein said copolymer is an alternating copolymer.

8. The electrolyte of claim 7 wherein said ethylene oxide is present in said copolymer in a quantity of at least about 60% by weight.

9. The electrolyte of claim 1 wherein said ethylene oxide is present in said copolymer in a quantity of about 80% by weight and said propylene oxide is present in said copolymer in a quantity of about 20% by weight.

10. The electrolyte of claim 9 wherein said copolymer is a block copolymer.

11. The electrolyte of claim 9 wherein said copolymer is a random copolymer.

12. The electrolyte of claim 9 wherein said copolymer is an alternating copolymer.

13. An electrolyte for copper electroplating, comprising:
an electrolyte solution;
a copolymer comprising ethylene oxide and propylene oxide providing in said electrolyte solution; and
a leveling agent provided in said electrolyte solution.

14. The electrolyte of claim 13 wherein said copolymer is a block copolymer, a random copolymer or an alternating copolymer.

15. The electrolyte of claim 13 wherein said ethylene oxide is present in said copolymer in a quantity of at least about 60% by weight.

16. The electrolyte of claim 13 wherein said copolymer is present in said electrolyte solution in a concentration of from about 50 ppm to about 500 ppm.

17. A method of electroplating a metal on an electroplating surface, comprising the steps of:
providing an electroplating bath solution;
mixing a copolymer comprising ethylene oxide and propylene oxide with said solution in a concentration of from about 50 ppm to about 500 ppm;

immersing said electroplating surface in said solution;
and

electroplating said metal onto said electroplating
surface.

18. The method of claim 17 wherein said copolymer is a
block copolymer, a random copolymer or an alternating copolymer.

19. The method of claim 17 wherein said ethylene oxide is
present in said copolymer in a quantity of at least about 60% by
weight.

20. The method of claim 17 wherein said ethylene oxide is
present in said copolymer in a quantity of about 80% by weight
and said propylene oxide is present in said copolymer in a
quantity of about 20% by weight.